Collaborate and Cooperate: Teacher Education for Integrating Language and Content Instruction

By JoAnn Crandall

Teachers may be uncomfortable teaching both language and content, but as Mohan (1986) had reminded us, in the real world, people learn language and content simultaneously, and teachers need to be able to address both within their classrooms. To learn academic English requires the use of academic English. Content teachers cannot expect students to arrive in their classrooms fully proficient in academic English; nor can English language teachers leave the task of presenting academic texts and tasks to the content teacher. As I have argued previously, "students cannot develop academic knowledge and skills without access to the language in which that knowledge is embedded, discussed, constructed, or evaluated. Nor can they acquire academic language skills in a context devoid of content" (Crandall 1994:256). Students learn academic language when they have something to think or write about in that language (See Mohan and van Naerssen 1997:22; Master 1997:30), and they learn the academic registers of specific disciplines when they are engaged in understanding and constructing meaning in those disciplines, perhaps in the project work which Stoller (1997:2) discusses.

We are confronted by a dilemma, then, when English teachers feel unprepared to integrate authentic texts, tasks, or tests from content areas in their English classes, or when content teachers perceive themselves as unable to help English language learners to understand academic concepts through the language they are still learning. This problem is not just one confronted by teachers in English-as-a-second-language contexts. Increasingly, in many countries, students are expected to participate in English-medium classrooms for at least some of their academic or professional careers. At a minimum, students may need to read some academic texts in English, though they may discuss or write about them in their primary language. Or, students may enroll in courses or entire academic programs which are taught through English and be expected to function at least part of the time as both a student and a professional in English.

It is not surprising, however, that both language and content area teachers may be frightened at the prospect of integrating language and content instruction, since there is limited attention to language needs in the preparation of content teachers, and limited attention to either the specific discourse of academic disciplines or to the practical concerns of needs analysis, text adaptation, curriculum development, or collaborative teaching in most language teacher education programs. The majority of teachers who develop strategies, materials, or programs on integrated instruction learn to do so after they have been teaching for some time.

Too often, teacher preparation focuses on decontextualized theory, with limited attention to practice. Too often, inservice teacher development is mired in the daily challenges of teaching, and opportunities for continued development may be limited to workshops or brief seminars,

without opportunities for reflection, application to the classroom, or opportunities to explore new theories or approaches. But it is possible, through collaboration and cooperation, for teachers to develop the confidence and the competence to effectively integrate language and content instruction, in any of the many models by which it is practiced around the world: through content-based language instruction (Krueger and Ryan 1993; Crandall 1987), sheltered content courses (Krashen 1993), adjunct or paired courses (Snow and Brinton 1988; Crandall and Tucker 1990), thematic or task-based instruction (Enright and McCloskey 1988; Nunan 1989) or languages for academic or specific purposes (Brinton, Snow, and Wesche 1989; Crandall 1987). (See Crandall, 1993a for a review of these program models and instructional strategies in content-based language instruction.)

This article reviews some strategies for helping prepare preservice (prospective) and inservice (experienced) English language and content area teachers to more effectively teach students to function in English-as-a-second or foreign-language classrooms in elementary, secondary, and tertiary educational contexts around the world. The strategies are drawn from the three major models of teacher development: craft or training; mentoring and coaching; and inquiry and reflection (See Crandall 1993b for a review of these.) At the core of each is an opportunity to collaborate or cooperate with colleagues from across the curriculum, helping to improve instruction for English language learners at the same time as engaging in professional development for oneself. While the audience for the Forum is more likely to be language teachers, I have deliberately included content teachers in the discussion, since I believe that both need to be involved for optimum learning of both teachers and students. Moreover, the language teacher is likely to encourage the involvement of content teachers in the teacher development program, and the strategies described below can serve as suggestions. It is also my hope that teacher educators, administrators, and others charged with preservice and inservice teacher education will include these strategies in their programs.

These strategies need to be viewed as part of an ongoing process of teacher development which begins in preservice (teacher preparation) programs and continues throughout the professional life of the teacher. Knowledge, skills, and confidence develop over time, as one has the opportunity to acquire new understandings, to work with new students in new contexts, and to reflect upon one's own growth as a professional. Since there has been limited focus on integrated instruction in preservice teacher education, many of the strategies or models which are described are from inservice teacher development. However, ways to adapt these for teacher preparation programs are also described.

Some Collaborative and Cooperative Teacher Development Strategies

Teacher development in integrated instruction usually begins when one English language teacher seeks out one content-area teacher to discuss the language learning needs or academic language problems of shared students (Short, Crandall and Christian 1989). Sometimes the catalyst for the discussion is a sense of frustration by the content teacher, who feels the student's English is not sufficiently proficient to participate in the class; other times the student sparks the process by asking for help with specific English. The teachers' discussion may lead to a number of very productive collaborative strategies, benefiting both the students and the teachers. These include

1) analysis of texts, materials, and curriculum; 2) classroom observation, reflection, and feedback; 3) collaborative action research and reflection; 4) development of integrated or complementary lessons, materials, or curricula; 5) collaborative or team teaching; and 6) collaborative university courses for preservice and inservice teacher education. Each of these is discussed in more detail below.

Analysis of Texts, Materials, and Curriculum

What makes academic language complex? Why is it that students develop seeming fluency in informal, social language before they are able to understand and write academic texts? A number of studies have demonstrated that it can take a great deal of time for students to master the cognitively complex, relatively unembedded or context-reduced language of the academic classroom. (See Collier 1992 for a review.) But what does that language look like in academic texts? How important is it to understanding the basic concepts expected in the mathematics, science, or social studies classroom? These are questions worthy of collaborative analysis, discussion, and reflection. They can help the English language teacher better understand the types of texts, the nature of the written language discourse (e.g., "Find a number such that 3 times the number plus 9 is equal to 30" or "Every action has an equal and opposite reaction"), the key vocabulary (technical, sub-technical, and common vocabulary which has a special meaning in that discipline, such as "root" or "irrational" in mathematics) and structures (e.g., passive voice or historical present) which students need to understand if they are to be able to use the language to construct meaning in their other courses. By looking at English language teaching texts and materials, the content area teacher can get a better understanding of how language can be taught, learned, and integrated into problem-solving, discussion, or writing tasks that could be adapted for the content classroom.

Text and materials analysis is a frequent first step in both preservice and inservice teacher development programs, whether these programs occur within one school or program or across many institutions, since this analysis and discussion can help develop a common vocabulary and framework for further collaboration and learning. Being able to read and understand texts written in English is likely to have a high priority in most educational contexts, and reviewing others' materials and texts is a natural and non-threatening place to begin. However, it is usually only a beginning, since without an opportunity to observe classrooms to understand how the text material is used in the class, what instructional strategies are employed, and what concepts and vocabulary are most important, it may be difficult for a language teacher to develop appropriate integrated instruction.

Classroom Observation, Reflection, and Feedback

Peer observation can be a powerful source of insight and discovery, though it can be intimidating, especially in contexts in which observation is usually undertaken only for supervision and evaluation. To be effective in teacher development, observation needs to be thought of as a cooperative discovery process. A focus on shared students and their attempts to

negotiate meaning and construct understandings in both classes can help keep the attention focused on student learning, rather than on teacher effectiveness.

An observation form can also help structure the observation and keep it from becoming an evaluation. The following kinds of instructional questions can be asked:

The observation form also helps structure the follow-up feedback session, when both teachers meet to better understand the goals, instructional means, and student difficulties with the class. The discussion of specific activities, over time, may lead to ongoing collaboration by the teachers, with each trying to integrate materials, strategies, and concepts from the other's classes, leading to joint development of curriculum or materials, workshop or conference presentations, or the informal recognition of these teachers as "master teachers" for others in the school, university, or district to learn from in their attempts at integrating instruction.

Observation can help experienced teachers develop new strategies and experience a kind of renewal, since most will not have had the opportunity of observing different teaching strategies or classrooms in many years, if at all. Issues of time, access, or attitude may have prevented much opportunity for classroom observation even in the preservice teacher education program, and teachers may be relying on their experiences as a student (termed their "apprenticeship of observation") for their understanding of the teaching process.

If it is not possible to engage in classroom observation, it may be possible to have classes videotaped. Individual teachers or groups can then engage in discussion and reflection, using a form such as the above to structure the discussion. It may also be possible for teachers to view the tape from different perspectives by focusing on a specific student or group of students or on particular activities or skills. The video offers a neutral stimulus to trigger discussion and also focuses attention on how language and content classrooms work.

Collaborative Action Research and Reflection

Analyzing texts and observing and talking about classes are two exciting ways to increase one's understanding of other classrooms and disciplines. They are often part of an action research project conducted formally or informally by teachers interested in looking more closely at some aspect of their own teaching. Action research engages teachers in collecting and analyzing data from a variety of sources that both describes what happens in classes and helps improve practice. Student interviews, analysis of student writings, audio- or video taping of classes, dialogue journal writing with students or other teachers are all possible means of addressing and analyzing instructional questions. While teachers engage in informal action research in their classes all the time, it can also be undertaken collaboratively by several teachers to answer parallel or complementary questions about the curriculum, materials, assessment, or teaching strategies which affect students that teachers share. Table 1 shows the kinds of questions these might be.

These are all questions which teachers have asked and researched in their action research projects. The first project involved both a high school chemistry teacher and a graduate student preparing to be an ESL teacher in looking at what problems learners have at different levels of

English language proficiency and what strategies were most helpful for each. In the second project, a middle school mathematics teacher and an ESOL teacher collaborated to identify both gaps in the students' mathematics education and problems that these students had with basic mathematical and algebraic language.

Action research projects can focus on one or many students and involve a variety of data-gathering procedures. It can engage a number of teachers in a common research question, such as promoting greater thematic integration across the curriculum for students or engage individual teachers in research projects which collectively help address instructional questions. For example, teachers in a graduate course on "World Englishes and their speakers" each conducted an in-depth case study of one student, recording and interviewing that student, analyzing that student's English, and engaging in weekly dialogue journal writing to get a fuller appreciation of the student's background, strengths, and needs as they relate to academic English language and conceptual development. Reflecting on these case studies and sharing them with each other helped promote greater understanding of the challenges and possible strategies for meeting these in English language and other classrooms.

Action research projects can engage teachers in looking at the reading and writing demands across the curriculum (and in the process, build better understanding among the teachers). It can involve focus group interviews with small groups of students engaged in discussing a passage from a text or attempting to solve a complex mathematical problem. And, it can lead to other professional development activities such as the development of new materials, the co-presentation of a workshop, or co-authorship of a paper delivered to a teacher seminar or conference.

Development of Lessons, Materials, or Curricula

Since few content-based language texts or sheltered content materials exist for the classroom, another focus of professional development for language and content teachers may come through collaborative curriculum or materials development. The development of lessons, materials, or curricula which can be taught by either or both teachers, or in new courses which serve as a bridge to the content area, is also a natural outcome of peer observation or action research and reflection.

For example, a university in which English was becoming more widely used in different disciplines decided that a series of specialized English courses should be offered to students who had exited the basic English program. There were few materials for most of these courses which would reflect the ways in which English is used in the university. For example, in agriculture, students were only expected to read basic materials such as simple manuals or brochures, while in engineering and medicine, much of the instruction and all of the texts were in English. Teams of applied linguists, English language faculty, and faculty from the various colleges met to discuss the needs and then engaged in a two-year development effort. Content faculty indicated basic concepts to address and possible texts for use in the materials, and they also served as members of review teams to suggest changes in the materials developed by the English language and linguistics faculty. The completed texts were a series of thematic units which used both more

popular and technical texts as the basis of oral and written discussion and also served to develop academic language and concepts, while also teaching study skills, problem-solving, and other cognitive and metacognitive strategies. Not only were new texts created in this process, but both English and other faculty became more aware of the sources of difficulty for students and possible strategies to address these in both English and content classes.

Similarly, in a middle school in the United States, teachers who worked together in instructional teams identified possible themes such as careers, archaeology, exploration, and patterns, which could be used to integrate curriculum and instruction for students at each grade level. The social studies and ESL faculties have also collaborated on both content-based ESL and sheltered curriculum to be used by the ESL and the social studies teacher during the semester, leading to the development of a "sheltered social studies" guide which was shared with other middle school teachers with linguistically diverse classrooms.

The process of working together on curriculum and materials development provides ongoing professional development and deepens the understanding of what is involved in integrated instruction. Even when the collaboration is limited to two or more English language teachers engaged in addressing common concerns, the opportunities for introspection, reflection, and impact on one's practice can be profound. Involving prospective English and content teachers in the collaboration can broaden the impact. Teacher candidates often have access to new materials or approaches to share and they, in turn, can learn from more experienced teachers in the process.

Collaborative or Team Teaching

Teaching parallel courses (as in the adjunct model) or co-teaching within the same classroom can also offer an ongoing means of developing both the knowledge and skills for integrated instruction. In an adjunct model, an English language class is paired with a content class, with the English teacher focusing primarily on reading or writing, using the content and texts from the content class as a starting point. Adjunct teachers must co-plan their instruction and to the degree possible, provide parallel attention to the language and content underlying content area objectives. Other models of cooperative teaching involve an English language and content teacher co-teaching a core course in which students of all levels of English language proficiency are engaged; assigning additional materials in English to a content course which is taught through another language or conducting conversation or discussion sessions focused on that course in English; or cooperating on a program of student tutoring.

There are other, exploratory models of teaching which foster even greater opportunities for collaborative learning. For example, in one program in a secondary school in the United States, an experienced ESL teacher suggested to the principal that she could provide a better instructional program for beginning English language learners if she were able to co-teach with the content teachers for the students' entire instructional day. That ESL teacher co-teaches all the content areas, including English language arts instruction, in a true partnership of equals. While the content objectives are determined by the other teachers, the ESL teacher helps develop materials, introduces and clarifies concepts for the class, and works with small groups of

students. In the process, the ESL teacher models appropriate strategies such as the use of graphic organizers, cooperative learning, or journal writing, and also provides useful materials which the content teacher can adapt for use in other contexts or with other students. While the cost of this model might seem prohibitive, the team of teachers permits larger class sizes and increases the effectiveness of the instruction so that students can be more readily moved from this intensive ESL program to less intensive ones.

Collaborative University Courses for Preservice and Inservice Teachers

Action research, curriculum development, or inservice seminars can often develop into courses which bring prospective teachers (undergraduate and graduate students), teacher educators, and others into the teaching and learning process. In my experience, the best of these courses are taught collaboratively by teachers and teacher educators, and may even include students in the instructional process. In the course of my work with teachers, school districts, and universities, I have often been asked to "teach a course" that will help both language and classroom teachers to integrate language and content instruction. I have found, however, that experienced and prospective teachers, groups of students, and groups of teacher educators can often provide a more appropriate and effective course which brings together theory and experience from a variety of perspectives. For example, in a course on "Content ESL and ESP" for prospective and current English language teachers, teachers of other disciplines teach the course. A course on "Strategies for teaching linguistically and culturally diverse students" for content teachers involved master English language and content teachers in the instruction. Finally, in "Strategies for integrating language and content instruction" and the "World Englishes" course described above, experienced and prospective teachers, teacher educators, administrators, evaluation personnel, and students participated in the instruction. One of the fundamental tenets of cooperative learning is that "None of us is as smart as all of us." That's especially true in matters of integrated instruction.

Some Suggestions for Getting Started

The best integrated teacher education efforts, in my experience, begin small and involve committed teachers who are determined to better understand the nature of their work. When others witness the renewed energy and excitement that these efforts create, others will want to become involved as well. Administrators can help provide release time, common planning time, materials, or financial support for these efforts, but they should not require others who may not be interested to participate. A focus on student achievement will also help encourage participation by teachers who might be intimidated by the prospect of close examination of their own practice. And, finally, it is important to begin with a focus on practice, as well as theory.

Implications for Preservice Teacher Education

There is remarkable agreement among those who have proposed or developed teacher development programs about the knowledge, skills, and attitudes that such programs should help

content teachers develop (Crandall and Tucker 1990; Teemant and others 1996). At a minimum, the program should foster:

1. basic understanding of the developmental nature of second language acquisition and of errors as a sign of learning;

2. understanding of the nature of academic language and skills and helping students to develop this through content study;

3. strategies for accommodating different levels of English language proficiency in the classroom without "watering down" the curriculum by providing:

a. multiple opportunities to negotiate meaning and construct understanding through the use of multiple media (reading texts, writing assignments, class discussion),
b. repetition or rephrasing of difficult concepts or vocabulary;
c. multiple grouping strategies which promote cooperative learning, peer tutoring, and other learner-centered approaches and provide opportunities for instructional conversations, scaffolding, and support from more experienced peers or the teacher;
d. demonstrations and experiential learning to reduce dependence on academic language for conveying meaning and understanding;
e. visuals, realia, and other means of using concrete, embedded instruction as a bridge to the more abstract; and
f. graphic organizers and other pre- and post-reading and listening strategies to break concepts into manageable chunks and focus students' attention on major concepts, rather than number of pages to be "covered";

4. an understanding of differences in cross-cultural communication; and

5. strategies for assessment and evaluation, including portfolios, checklists and inventories, and other accommodations, such as the use of the primary language.

For language teachers, all of the above is needed, and much may already be part of the language teacher education program. What needs to be added, however, to enable English teachers to more effectively address academic language needs, is:

1. an understanding of different ways to conduct needs analyses, including analyses of textbooks and curriculum and classroom instruction;
2. strategies for integrating content into language instruction, including ways to focus on both essential ("content-obligatory") and related, useful sub-technical or other academic ("content-optional") vocabulary (See Snow and others 1989); and

3. strategies for developing learning strategies, especially cognitive and meta-cognitive strategies that will increase students' effectiveness and efficiency in using English as an academic medium.

This content could be most effectively delivered in a teacher education program that brings together prospective and experienced teachers, administrators, teacher educators, and even students using some of the strategies described above. In fact, if teacher education is to be a seamless process of lifelong learning, then preservice and inservice teacher education needs to be better integrated from the outset. Too often, experienced teachers remark that new teachers have lots of theory, but not much ability to apply it in the classroom, which is not surprising, given the lack of attention to practice in most teacher education programs. On the other hand, new teachers often feel that experienced teachers are working from instructional theories and frameworks that are not very current. These teachers need time to step back from their daily practice to reflect upon their students, courses, and instructional techniques. Both can learn these more effectively when they have opportunities to interact with each other and with colleagues across the curriculum from the beginning of their teacher education program. (See Crandall 1994 for a fuller discussion of this kind of integrated teacher education model.) In addition, as linguistic and cultural diversity and the role of English in some aspect of education or professional preparation increase, it is vital that some attention to integrating language and content instruction be a focus of both preservice and inservice teacher education, and that those of us engaged in projects similar to those discussed above share the results of these efforts with colleagues in this journal and other professional venues.

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